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OPTIONS FOR THE DEVELOPMENT OF THE EDUCATION AND PROFESSIONAL QUALIFICATION OF SOUTH AFRICAN ACTUARIES

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ABSTRACT

This paper investigates the various education and qualification systems available around the world for actuaries, and analyses which actuarial associations rely on their own examinations, those of other bodies, or those of universities. Particular attention is given to the Australian system, which in several ways parallels the South African situation.

The paper outlines the pros and possible cons of a local education and qualification system for the actuarial profession in South Africa. Various options currently available to the Actuarial Society of South Africa relating to a local education and qualification system are discussed. Following the withdrawal of the localised final examinations by the Faculty and Institute of Actuaries at the end of 2006, the maintenance of the current system is not an option. Key issues that will need to be addressed if changes are to be made to the South African actuarial education system are highlighted.

KEYWORDS

Education; professional qualification; professional designation; actuaries; South Africa

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1. INTRODUCTION

1.1 PURPOSE OF THE RESEARCH

1.1.1 For some time now, members of the Actuarial Society of South Africa (ASSA), e.g. Asher (1998), have suggested that the Society ought to have its own examination system in place for the purpose of educating and licensing local actuaries rather than relying on the examinations of the Faculty and Institute of Actuaries (UK).

1.1.2 The purpose of this paper is to contextualise this suggestion by considering the approaches taken to education and licensing in other countries as well as the main advantages and disadvantages of a local education and licensing system in South Africa in the current regulatory environment for education.

1.1.3 It is hoped that this can stimulate discussion of the matter amongst the ASSA membership and assist in the future endeavours of ASSA in this regard.

1.2 THE CURRENT SITUATION IN SOUTH AFRICA

1.2.1 Since its formation in 1948 ASSA has admitted, as Fellow members, persons who have qualified as actuaries based on the examinations of the Faculty and Institute of Actuaries (UK) and the Society of Actuaries (USA). Almost all South African actuaries are Fellows of the UK bodies.

1.2.2 The current examination system of the Faculty and Institute of Actuaries is described in Appendix B, but is essentially as follows:

– a 'core technical' stage (comprising nine subjects);
– a 'core applications' stage (comprising three subjects);
– a 'specialist technical' stage (comprising two subjects from a choice of six); and
– a 'specialist applications' stage (comprising one subject from a choice of six).

1.2.3 From September 2003 ASSA, together with the Faculty and Institute of Actuaries, has given students the option of writing a localised version of the final (fellowship) examination (400 series before 2005 and specialist applications thereafter). By 2006 this was available in five of the six specialist areas, namely: health and care, life insurance, general insurance, pensions and investment.

1.2.4 The take-up rate of this option has, to date, been fairly disappointing to the profession, around 85% of students on average preferring to write the UK specialist applications final examination—despite the fact that the qualification awarded is the same. To little avail ASSA has attempted to make the local examination more attractive by staging it twice a year (initially it was available only once a year) and by encouraging tuition in the Western Cape (at Stellenbosch University and the University of Cape Town) in three of the subjects to add to the tuition already offered in Gauteng by the University of the Witwatersrand.

1.2.5 To date the total number of entries for the five South African specialist applications examinations has been as shown in Table 1.

1.2.6 Summed over the same five examination sessions, the numbers of examination entries for the corresponding UK-specific fellowship papers written in South Africa were 62, 86, 109, 98 and 90 respectively.

1.2.7 The general insurance and investments subjects are the least different to the UK-based equivalents. Since currently few actuaries practise in the field of general insurance it may be that ASSA now needs to review the usefulness of this subject (although potential demand should not be ignored).

1.2.8 The low take-up rates for the localised examinations were cited by the Faculty and Institute of Actuaries for their decision, at the end of 2006, to withdraw this option as from the April 2007 examination session.

1.2.9 From September 2008 all new Fellow members of ASSA will have to have written, in addition, a local 'practice module'. These examinations will be similar to those introduced in the UK in 2005. It is hoped that this will increase the number of students opting to write the local fellowship examination as this will save students having to learn both South African and UK legislation.

1.2.10 In October 2006 a draft of this paper was submitted to the ASSA Council (and ASSA Education Committee) to assist with deliberations surrounding a local qualification. In December 2006 the ASSA Council announced to its members that it intends to drive the establishment of a local actuarial qualification by 2010.

Table 1. Total number of entries for the South African specialist applications examinations

	Health and care SA1 RSA	Life insurance SA2 RSA (or 402)	General SA3 RSA (or 403)	Pensions SA4 RSA (or 404)	Investment SA6 RSA (or 401)
Sep 2003	Not offered	5	1	0	4
Sep 2004	Not offered	12	2	4	7
Sep 2005	3	10	0	4	1
April 2006	5	5	0	7	3
Sep 2006	2	5	2	4	4
Total to date	10	37	5	19	19

1.3 EXEMPTIONS FROM THE EXAMINATIONS OF THE FACULTY AND INSTITUTE OF ACTUARIES

1.3.1 Several South African universities offer comprehensive actuarial-science programmes. The first such university to offer an actuarial-science programme was the University of Cape Town (whose programme was established in 1970). It was followed by the University of the Witwatersrand, the University of Stellenbosch and the University of Pretoria. In the last few years actuarial-science programmes have been established at the Universities of KwaZulu-Natal, North West and the Free State.

1.3.2 All these programmes offer successful actuarial students exemptions from the examinations of the Faculty and Institute of Actuaries. For each subject covered in the exemption recognition agreements set up between the Faculty and Institute of

Actuaries and the various universities, those agreements require the universities to have an approved syllabus (in line with that of the Faculty and Institute of Actuaries) as well as an approved independent examiner (approved by the ASSA Education Committee and ratified by the Faculty and Institute of Actuaries) who is ultimately responsible for taking the decisions on which students will be recommended for exemptions.

1.3.3 While some of the South African universities offer exemptions only from subjects at the first (core technical) stage, others offer exemptions from some of the subjects in the core applications and specialist technical stages also (namely the Universities of Cape Town, Stellenbosch, Witwatersrand and Pretoria).

1.3.4 While precise figures were not available, it is estimated that there could be of the order of 200 graduates from actuarial-science programmes in South Africa each year that enter the profession as students, with an average of six exemption recommendations each.

1.3.5 For a student to have a university's exemption recommendations formally acknowledged by the Faculty and Institute of Actuaries it is necessary for the student to pay an exemption fee to the Faculty or Institute of Actuaries. This fee is currently £128 (approximately R1800) for each of the core technical subjects (which is approximately 80% of the relevant examination fee).

1.3.6 Repeated requests by ASSA to have the Faculty and Institute of Actuaries refund some of this money to ASSA to assist in the provision of the education in South Africa that produced those same exemption recommendations have fallen on deaf ears. The Faculty and Institute of Actuaries have indicated that they believe the revenue they gain from this, and other aspects of their actuarial education system, to be a necessary source of finance for them.

2. EDUCATION AND QUALIFICATION OF ACTUARIES AROUND THE WORLD

2.1 THE INTERNATIONAL ACTUARIAL ASSOCIATION (IAA)

2.1.1 The IAA was formed in 1895 (under the name "Comité Permanent des Congrès d'Actuaires") as an association of individuals, but was reconstituted in 1998 at the 26th International Congress of Actuaries as an association of actuarial associations. The IAA exists to encourage the development of a global profession and it is dedicated to the research, education and development of the actuarial profession and of actuarial associations worldwide.

2.1.2 For an actuarial association to become a full member of the IAA it must satisfy certain criteria[1], namely:

– have a purpose similar to that of the IAA;
– have an acceptable code of professional conduct;
– have a formal disciplinary process;
– have an acceptable process for the adoption of standards of practice; and

1 Source: IAA website, www.actuaries.org, September 2006

– implement and maintain education requirements that meet or exceed the IAA educational guidelines and syllabus.

2.1.3 Currently the IAA has 55 full members spanning 49 countries. A list of the IAA full members, along with a count of its number of Fellows, is contained in Appendix A. ASSA is a full member of the IAA.

2.1.4 An actuarial association that does not meet all the criteria for accreditation as a full member may apply for recognition as an associate member of the IAA.

2.2 VARIATIONS IN EDUCATION AND QUALIFICATION SYSTEMS

2.2.1 While IAA full membership requires the member association to maintain certain minimum standards of education for its members, the IAA recognises that there can still be a great variation in systems adopted by associations and from country to country.

2.2.2 Some of the key variations include:

(a) whether or not the association sets its own examinations;

(b) whether or not the association allows exemptions (based on academic achievement elsewhere, e.g. at a university or another professional organisation) from some or all of these examinations;

(c) whether or not the association admits Fellows mainly or solely on the basis of the examinations of another actuarial association;

(d) whether the association relies mainly or solely on a university-based system of education or whether it provides its own material (usually for self-study); and

(e) whether or not the association has control over the educational content (and standards) of the examinations for admission as a Fellow.

2.2.3 Variations can also occur as the result of differences in:

– whether there is an emphasis on mathematics, statistics or business elements (e.g. accounting and commercial considerations);
– to what extent Fellows are required to specialise in a particular area;
– whether or not there are different qualification standards for different areas of practice; and
– whether or not there is only one actuarial association in the country.

2.2.4 Ultimately there is also the question of the severity of the examinations. Undoubtedly there can be large variations in this, which can be very difficult to quantify. For example, some associations have a long-established reputation worldwide for setting stringent examinations (e.g. the Faculty and Institute of Actuaries and the Society of Actuaries), whereas others do not (e.g. the American Society of Pension Professionals and Actuaries, which only has a small proportion of members who are in fact actuaries).

2.3 A SUB-DIVISION OF IAA MEMBERS

2.3.1 For the purpose of analysis the IAA full members have been sub-divided into three groups based on the number of Fellow members of the association as shown in Table 2.

2.3.2 The cut-offs between these groups are, admittedly, somewhat arbitrary, but it seems reasonable to make some such sub-division of the IAA members, as size of

local membership should have a bearing on the significance of the association's ability to control the education provided to its members and possibly also on the prominence of the profession in the country concerned.

2.3.3 The three sub-groups are considered in turn below.

Table 2. Sub-division of IAA members

Size	Number of Fellows
Large	More than 1000
Medium	Between 350 and 1000
Small	Less than 350

2.4 THE LARGE ACTUARIAL ASSOCIATIONS

2.4.1 Table 3 contains a list of the twelve large actuarial associations, together with an indication as to how each of their education and qualification systems work with respect to the five key variations outlined in section 2.2.2 above, namely:

(a) Does the association offer its own examinations?

(b) Does the association allow exemptions (based on academic achievement elsewhere, e.g. at a university or another professional organisation) from some or all of its examinations?

(c) Does the association admit Fellows mainly or solely on the basis of the examinations of another actuarial association?

(d) Does the association rely mainly or solely on a university-based system of education?

(e) Does the association have control over the educational content (and standards) of the examinations for admission as a Fellow in the case where it allows exemptions or uses another association's exams?

2.4.2 Eight of the twelve large associations have their own examinations. All eight of these associations were formed before 1950 (and some even before 1900). All but two of the eight (namely the Institut des Actuaires (France) and the Institute of Actuaries of Japan) allow students to gain exemptions from some or all of their examinations, but retain control over the material covered in courses leading to these exemptions.

2.4.3 Four of the twelve large associations do not have their own examinations. The only one of these associations formed before 1950 is the Instituto de Actuarios Españoles (Spain) and it, like many other actuarial associations in continental Europe, makes use of a long-established university-based education system.

2.4.4 The other three large associations that do not have their own examinations are as follows:

(a) The American Academy of Actuaries (AAA):

Fellow members are admitted only after they have qualified as actuaries through another US actuarial association. Hence there is no need for the AAA to have its own system of examinations.

(b) The Canadian Institute of Actuaries:

Fellows of the Canadian Institute of Actuaries (other than those admitted under a mutual recognition agreement) must have completed:

- the examinations of the Society of Actuaries and the 'practice education course' of the Canadian Institute of Actuaries; or
- the examinations of the Casualty Actuarial Society, including an examination based on Canadian practice.

In addition to this there is a local work experience requirement. Hence there is no need for the Canadian Institute of Actuaries to have its own examination system.

(c) Conference of Consulting Actuaries:

Some members of the CCA are not what one might typically describe as actuaries, being more like insurance practitioners or consultants. Hence it is not unreasonable that they do not set the same requirements for fellowship as might some other actuarial associations.

Table 3. Summary of the education and qualification systems of the large actuarial associations[2]

Association	No. of Members	As at	Answers to question				
			(a)	(b)	(c)	(d)	(e)
USA (AAA)	14 959	31/12/04	N	–	Y	N	N
USA (SoA)	10 856	06/12/04	Y	Y	N	N	Y
UK, England (IoA)	6 621	31/12/04	Y	Y	N	N	Y
Canada	2 759	28/06/04	N	–	Y	N	N
USA (CAS)	2 751	01/01/06	Y	Y	N	N	Y
Germany	2 420	01/01/05	Y	Y	N	N	N
France(IAF)	1 471	31/12/04	Y	N	N	Y	N
Spain (IAE)	1 450	16/12/04	N	–	N	Y	N
Australia	1 378	30/09/04	Y	Y	N	Y	Y
UK, Scotland (FoA)	1 287	31/12/04	Y	Y	N	N	Y
Japan (IAJ)	1 102	01/01/05	Y	N	N	N	–
USA (CCA)	1 070	31/12/05	N	–	Y	N	N

("Y" denotes "Yes", "N" denotes "No", and "–" indicates "not applicable".)

2 Compiled from information gathered from the IAA website and the websites of the individual associations – all of which can be accessed via the IAA website, www.actuaries.org, September 2006

2.5 THE MEDIUM-SIZED ACTUARIAL ASSOCIATIONS

2.5.1 Table 4 contains a list of the nine medium-sized actuarial associations, together with an indication as to how each of their education and qualification systems work with respect to the five key variations outlined in section 2.4 above:

2.5.2 Of the nine medium-sized actuarial associations only two have their own examinations. These are Het Actuarieel Genootschap (Netherlands) and Association Suisse des Actuaires (Switzerland). The education system of the Swiss association is strongly linked to universities and it is only the final examination that is conducted by the profession. This examination is an oral examination taken after the completion of an approved university programme in actuarial science.

2.5.3 Seven of the nine medium-sized associations do not conduct any of their own examinations. Four of these use a university-based system, namely the associations in Brazil, Mexico, Belgium and Spain (Col·legi d'Actuaris de Catalunya).

Table 4. Summary of the education and qualification systems of the medium-sized actuarial associations[3]

Association	No. of Members	As at	Answers to question				
			(a)	(b)	(c)	(d)	(e)
Netherlands	803	26/01/06	Y	Y	N	N	N
Brazil	736	01/01/05	N	–	N	Y	N
South Africa	561	31/12/05	N	–	Y	N	N
Switzerland	447	01/01/05	Y	Y	N	Y	Y
Mexico	418	31/12/04	N	–	N	Y	Y
Belgium	400	01/02/05	N	–	N	Y	N
Japan (JSCPA)	400	31/12/04	N	–	Y	N	N
Spain (CAC)	373	31/12/05	N	–	N	Y	Y
Ireland	357	31/12/04	N	–	Y	N	N

2.5.4 The Japanese Society of Certified Pension Actuaries (the smaller of the two actuarial associations in Japan) requires its Fellows to have qualified as Fellows of the Institute of Actuaries of Japan. Hence it has no need for its own examinations.

2.5.5 The Society of Actuaries in Ireland requires its Fellows to pass the examinations of the Faculty or Institute of Actuaries (UK). Being, geographically, so

3 Compiled from information gathered from the IAA website and the websites of the individual associations – all of which can be accessed via the IAA website, www.actuaries.org, September 2006

close to the UK, Irish actuaries need to be fully aware of the UK environment, and so it is not unreasonable that the Society relies upon the examinations of the UK bodies.

2.5.6 ASSA is the only other medium-sized actuarial association that does not have its own examinations. Some things to note about the South African situation are:

– ASSA can boast approximately 700 student members, which is about 25% more than its number of Fellows, indicating a strong local interest in the profession. In the September 2006 examinations 773 students wrote examinations of the Faculty and Institute of Actuaries in South Africa. In addition to this there are many more students of actuarial science still at university who have not yet joined ASSA. Around 800 new students enter actuarial-science undergraduate programmes at South African universities each year. In comparison, the Faculty of Actuaries only has about 800 students (worldwide), though many people regard it as a much bigger association than ASSA. (A few associations, though, have much higher ratios of students to Fellows, for example Mexico (16 times as many), India (6 times as many) and the Society of Actuaries (over twice as many).)
– South Africa has a strong tradition of local university-based actuarial education, which provides students with exemptions from the examinations of the Faculty and Institute of Actuaries.

2.6 THE SMALL ACTUARIAL ASSOCIATIONS

2.6.1 The remaining 34 actuarial associations that are full members of the IAA can currently be classified as small, each having fewer than 350 Fellow members. Twenty of these associations had less than 100 Fellows at the last count.

2.6.2 Information on the education and qualification systems in many of these associations is not easy to come by, many of the associations not even having websites.

2.6.3 Seven of the small actuarial associations were found to have their own examinations, namely the actuarial associations of Greece, India, Indonesia, Israel, Italy and the Philippines and the American Society of Pension Professionals and Actuaries.

2.6.4 Of those without their own examinations, the large majority rely on a university-based system of qualification.

2.7 CONCLUSIONS

2.7.1 From sections 2.4 and 2.5 it can be seen that all the large and medium-sized actuarial associations worldwide (other than ASSA) have their own examinations, which must be passed for Fellow membership, unless:

– their members are drawn from Fellows of another actuarial association in the same (or, in the case of Ireland, a neighbouring) country; or
– they have a very long-established history of relying upon a university-based system within their countries for the education of actuaries.

2.7.2 It is clear that the larger associations place much weight on the fact that their Fellows have suitable local training in order to maintain the profession's standards.

2.7.3 In South Africa it cannot be reasonably claimed that ASSA's Fellows have been suitably trained for the local market. What can be said, though, is that South

African actuaries have undergone rigorous education, normally starting at a local university and ending by having to pass the examinations of a foreign association based on that association's legislative environment. Such persons are obviously very capable and can thus adapt to the local situation when called upon to do so.

2.7.4 With as many students writing the examinations of the Faculty and Institute of Actuaries in South Africa as there are students of the Faculty of Actuaries (and in fact many more if university students are counted), South Africa must surely have a large enough student base to warrant its own education and examination system.

3. THE AUSTRALIAN SYSTEM

3.1 A BRIEF HISTORY

3.1.1 In the late 1970s the Australian profession began to break away from the education formerly provided by the Institute of Actuaries (UK) and by the end of the decade had set up its own examination system.

3.1.2 White (1977) noted that there was much increase in regulatory control in areas previously left to professional bodies. He argued that the local profession should ensure that it (rather than an overseas body or a regulator) controls the accreditation of actuaries, and to this end it should at least be educating and examining students in the later subjects where local conditions were of significance.

3.1.3 White (op. cit.) noted that these ideas were not new, and that presidential addresses by Whittle (in 1968) and Anderson (in 1969) had mentioned the importance of educating and examining actuaries on local conditions as a requirement for fellowship of the Institute in Australia.

3.1.4 A sub-committee set up in the mid-1970s reported to Council that "only the introduction of fellowship examinations would ensure that the control of the profession in Australia would remain in the hands of the profession."

3.1.5 The Institute of Actuaries of Australia launched its own fellowship examinations around 1980 as a requirement for fellowship. Since then it has moved increasingly away from the UK examinations until now, when it is only the foundation subjects (core technical) that are the same.

3.1.6 It is necessary to be a Fellow of the Australian Institute to carry out most statutory roles in Australia, but fellowship can also be obtained through mutual recognition agreements that are in place with some of the major associations (e.g. Faculty of Actuaries, Institute of Actuaries, Society of Actuaries, Casualty Actuarial Society and the Canadian Institute of Actuaries).

3.1.7 Fellowship of the Australian Institute is the preferred route amongst Australian students. The Education Manager of the Institute of Actuaries of Australia[4] believes that this may be related to the face-to-face tuition available through the four accredited universities.

4 Mr P. Latham. Series of e-mails during September 2006

3.2 THE MAIN CHALLENGES

According to Ms H. Rowell,[5] who has been involved in several Australian education committees and taskforces (as well as course writing and tuition) over the last 20 years, the major challenges faced (and in some respects still being faced) have been:

- to find a sufficient number of people to be involved in all aspects of education (course writing, tuition and examination);
- to develop course syllabuses and material and keeping them up to date;
- to determine appropriate assessment standards, consistent across all subjects; and
- administration issues, such as the hosting of exams in several locations.

These are issues which are likely to be of relevance to ASSA too if it goes a similar route.

3.3 THE CURRENT AUSTRALIAN QUALIFICATION

3.3.1 A fuller description of the Australian qualification can be found in Appendix D, but the structure is broadly as follows:

(a) Part I (foundation):

Part I examinations cover the material of the UK's core technical subjects, CT1–CT8, and can be taken either through one of four approved university undergraduate-degree programmes (ANU, Macquarie, Melbourne or New South Wales) or by correspondence with the Institute of Actuaries (UK) (as a student member of the Australian Institute).

(b) Part II (actuarial control cycle):

This subject is taught by approved universities in Australia, and covers the application of actuarial skills to business situations. It was introduced some years before the Faculty and Institute of Actuaries introduced the 'core applications concepts' subject in 2005, and has similar aims.

(c) Part III (specialisation):

This part is offered through the Institute of Actuaries of Australia. It builds on the concepts covered in Part II and comprises:

- two compulsory subjects:
  - investments; and
  - commercial actuarial practice; and
- two additional (half-year) subjects chosen from:
  - life insurance Part A and Part B;
  - general insurance Part A and Part B;
  - superannuation and planned savings Part A and Part B; and
  - investment management and finance Part A and Part B.

3.3.2 Completion of Parts I and II leads to associateship (AIAA).

3.3.3 Completion of Parts I, II and III as well as a professionalism course and suitable practical work experience leads to fellowship of the Institute of Actuaries of Australia (FIAA).

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5 E-mail dated 23 August 2006

3.3.4 The Part III courses also offer assignment marking, which, from 2007, is expected to be available online. The completion of assignments is compulsory, and it is strongly advised that students also participate actively in tutorials and online discussion groups.

3.3.5 The commercial actuarial practice course is another recent innovation by the Australian Institute, and is a combination of a five-day residential course, culminating in an eight-hour computer-based case study examination, and a more traditional examination. The content is largely based on case studies, and, according to Ms Rowell,[6] is intended to expose students to real-world problems in both traditional and newer practice areas.

3.4 CANDIDATE NUMBERS

3.4.1 The numbers of candidates sitting the various Part III (specialist) courses of the Institute of Actuaries of Australia in recent sittings are as follows:

Table 5. Number of students sitting the Australian Part III courses[7]

	Subject	2005 (1)	2005 (2)	2006 (1)
1	Investments	187	129	162
2A	Life insurance	61	62	53
2B	Life insurance	22	28	25
3A	General insurance	68	79	69
3B	General insurance	18	34	48
4A	Superannuation & planned savings	19	11	12
4B	Superannuation & planned savings	5	10	n/a
5A	Investment management & finance	20	19	14
5B	Investment management & finance	10	16	14
10	Commercial actuarial practice	n/a	28	23
	Total	410	416	420

3.4.2 In comparison, South Africa has around 350 examination attempts from candidates writing an examination of the Faculty and Institute of Actuaries at the specialist technical or specialist applications level each exam session.

3.5 RESOURCING

3.5.1 In White (op. cit.) it was estimated that the number of Fellows that would need to be involved for the introduction and continued running of fellowship

6 E-mail dated 23 August 2006

7 Mr Latham. Series of e-mails during September 2006

examinations from the early 1980s in Australia would be as follows (assuming that most of the Fellows involved would not be able to devote more than a half day a week, other than the examiners who would need to devote some extended periods during times of assessment):

– initial development: 26 Fellows (585 to 850 Fellow-days); and
– regular annual effort: 41 Fellows (550 to 780 Fellow days).

3.5.2 The estimate of the membership at that time suggested that there would be around 350 Fellows in Australia. White (op. cit.) concluded that the Australian Institute would thus have the necessary human resources to take on this task.

3.5.3 According to Mr Latham,[8] the resource implications of the current education system are broadly as follows:

(a) Writing, tuition and examination setting:

The aim is to have one course leader for each of the nine semester courses, which run for 15 weeks per semester. The course leader performs the roles of course writing and maintenance, delivering tutorials (or arranging for other people to take these), writing assignments and examinations and monitoring and replying to student posts on the online discussion forums. In practice, in many of the courses, these roles are shared between two or sometimes more persons. The Australian Institute estimates that the course-leader role should take from 8 to 12 weeks of full-time work (of 40 hours a week) per year (with courses running twice a year).

(b) Examining:

Volunteers are used for the marking of examinations. The examinations are all double-marked. Two markers are normally allocated to each of the questions on the examination papers, of which there are normally six. Thus 12 markers are required per examination. For the larger courses (such as investments, where there were 162 candidates last semester) 24 markers are used. In the previous semester a total of 90 markers were used. An amount of A$30 is budgeted per candidate for examination marking, which is shared between the markers. On the basis of their estimate of three hours to double-mark an examination (1,5 hours each), this converts to payments at the rate of A$10 an hour for each of the markers on average.

(c) Chief examiners and assistant examiners:

For each course there is a chief examiner, and there are one or more assistant examiners, who coordinate the marking process and review borderline candidates. It is estimated by the Australian Institute that the chief examiner spends about 50 hours, and the assistant examiner 30 hours, per semester on these tasks. There is a payment of A$1500 for each semester, which is shared amongst the chief examiner and his/her assistant examiners. A typical breakdown would be A$1000 for the chief examiner and A$500 for the assistant examiner, which works out at or about A$20 an hour. A chief examiner is also expected to write a report (or give an interview) for a candidate who requests this; the candidate must have failed the subject at least twice to be eligible. It can

8 Series of e-mails during September 2006

take around 4 hours to do each written report or 1,5 hours for each interview. In larger subjects there could be about a dozen students who request these. There is currently no additional payment for this work for the chief examiner, but the Institute is considering the introduction of such a payment.

4. PROS AND CONS OF LOCAL EDUCATION AND LICENSING

4.1 SURVEY OF STUDENTS

4.1.1 One of the important factors that will need to be considered if the education and examination of actuaries in South Africa is to change is how well any such changes will be received by students, i.e. the prospective actuaries.

4.1.2 To gauge students' feelings on this topic a survey was carried out amongst undergraduate and postgraduate students studying actuarial science at the University of Stellenbosch. The survey questionnaire and a summary of results can be found in Appendix E. In total 145 students completed the survey questionnaire (121 undergraduates and 24 graduates).

4.1.3 Some of the findings of the survey were as follows:

(a) The main reasons given as to why the students undertook actuarial studies were (in descending order of importance):

- the challenge (of a difficult qualification);
- the internationally recognised qualification;
- the prestige of being an actuary; and
- the money.

(b) The main reasons given as to why students find the Faculty and Institute of Actuaries' examinations attractive were (in descending order):

- no strong preference for the Faculty and Institute so long as the actuarial association through which one qualifies has an internationally recognised qualification of an equivalent standard to that of the UK associations (49%); and
- the fact that it is UK-based and internationally recognised (43%).

Other reasons included:

- the fact that the Institute and Faculty are the oldest actuarial associations; and
- the fact that it is not a South African qualification.

(c) 79% of students supported the introduction of compulsory practice modules.

(d) 61% of students felt that it was more appropriate for a local actuary to have written the SA-based fellowship examination as opposed to the UK-based examination. 13% of students disagreed with this (the other 26% being unsure).

(e) The two main reasons given as to why students might prefer to write a UK-based fellowship examination were (in descending order):

- if they intended to work in the UK (51%); and
- if the tuition material was better for the UK exam (33%).

Other reasons were:

- if the UK examination had a higher percentage of students passing; and
- if the UK examination had a lower percentage of students passing.

– Some students commented that by writing the UK-based examination they might become more marketable (particularly overseas).

4.1.4 When presented with the scenario in which an actuarial qualification is available in South Africa (which is internationally recognised by the International Actuarial Association and all of the major actuarial associations worldwide):

(a) Just over half (51%) of the students said they would not prefer this to the current situation, the others being fairly equally split between those who would prefer it and those who were unsure. (The survey could of course be biased towards the status quo as students who did not like the current method of qualification may have chosen an alternative career.)

(b) The concerns about a South African qualification were (in descending order):
- it will not have the same prestige as an overseas qualification (43%);
- nothing, provided standards are maintained (27%);
- it is South African and thus is unlikely to be as good as an international qualification (16%); and
- the tuition material will probably not be as good (11%).

(c) In the event that the above situation were the case, and it was compulsory to qualify as described to practise as an actuary in South Africa, 4% of students indicated that they would not have chosen an actuarial career. 88% still said they would want to be actuaries (the other 8% being unsure).

(d) 57% of respondents said that they would still wish to qualify as Fellows of the Faculty or Institute of Actuaries in this situation. 12% said they would not wish to do so (the others being unsure).

4.2 THE ADVANTAGES OF LOCAL EDUCATION AND LICENSING

4.2.1 Improve The Local Relevance

4.2.1.1 The setting of its own examinations would give the actuarial profession in South Africa the opportunity to directly control the development of education in order to meet the needs of actuaries with respect to developments in the local market. This is very important if the profession wishes to produce actuaries who are fully qualified to fulfil their obligations.

4.2.1.2 To date the training received by actuaries has been based on conditions in a foreign environment. The local profession can thus not claim to be producing actuaries suitably trained for practice in the South African environment. The fact that actuaries have done well in their local environments to date is more to do with the fact that they are intelligent and have been well selected by the examinations process than that they have been well trained for local conditions.

4.2.1.3 Can ASSA reasonably certify that members are suitably qualified to carry out a reserved role in South Africa if it has not trained or examined them? At present ASSA needs to rely on the individual actuary to obtain suitable work experience after passing the examinations of a foreign association. ASSA should thus rather have a compulsory local fellowship examination and also test local knowledge through a practice module.

4.2.1.4 With recent increases in public scrutiny this aspect is becoming critical for professions.

4.2.2 Build a Learning Profession

It is important that actuaries develop a sound understanding of the local environment in order that the profession can better adapt to changes in local conditions. The development of better local knowledge should also aid in the furthering of local research, which is essential if actuaries wish to be considered as true professionals as opposed to simply an occupational grouping plying a trade.

4.2.3 Keep The Profession in Control of The Profession

4.2.3.1 If regulators do not see the profession to be providing adequate training for its members to allow them to serve the public as they claim to do, there is the risk that the activities of actuaries could become increasingly regulated. If the profession has control of its own education system and standards, it can avoid, or react better to, any such criticism.

4.2.3.2 This was one of the key driving factors in the motivations for the Australian Institute of Actuaries when it decided to break away from the examinations of the UK profession and establish its own examinations as mentioned earlier.

4.2.4 Improve Pass Rates in The Fellowship Examinations

4.2.4.1 The setting of local examinations should improve pass rates, in particular at the final fellowship (specialist applications) level. Traditionally, South African students writing the UK specialist applications examinations have performed significantly worse than their UK counterparts. This must be due, in no small part, to the fact that South African students are writing these examinations without practical experience of working in the UK in that practice area.

4.2.4.2 This is not intended to suggest a lowering of standards in any way, but should result from the fact that students will be more familiar with the practice of the relevant subject. (Low pass rates should not be taken to infer high standards when in fact they could have more to do with irrelevant examinations.)

4.2.5 Set More Appropriate Examinations

Local control over the examination process would allow changes to be made to things such as:

– the timing of when examinations are staged;
– the number of examinations; and
– the form of examinations (e.g. the use of computer-based assessment or open-book examinations).

4.2.6 Allow ASSA to set Standards

4.2.6.1 By setting its own examinations ASSA would have control over standards. At present this responsibility is delegated to actuarial associations abroad. Recent changes to the education of UK actuaries could be claimed to represent a lowering of standards to achieve the objective of the UK Actuarial Profession to produce more actuaries and to expand influence into new fields.

4.2.6.2 A related point is that the setting of its own examinations would allow

ASSA to have some control over the supply of actuaries in the market. While this may protect against an over-supply, it would not be a wise move to increase supply through the lowering of standards.

4.2.7 Reduce Fees paid to The UK

4.2.7.1 There is a significant outflow of money each year to the UK profession in respect of membership, examination and exemption fees. The UK actuarial profession has indicated in the past that income from education and examinations is needed to subsidise membership fees.

4.2.7.2 The annual fees payable to the Faculty and Institute of Actuaries in respect of South African students' membership, examination and exemptions could be of the order of R10 million. Approximately we have:

– membership:	(800 students @ R2500 each)	R2 million
– examination:	April 2006	R2,5 million
	September 2006	R3 million
– exemptions:	(200 graduates, 6 exemptions each)	R2 million

4.2.7.3 If ASSA sets up local examinations there could not only be an overall reduction in costs to students, but fees paid would be largely retained within the country to be used to meet the costs that would be incurred in setting up and running a local education structure.

4.2.7.4 A related point is that this would also reduce exchange-rate risks faced by South African students and companies who currently have to pay membership and examination fees in British sterling.

4.2.8 Play a Leading Role in Africa

ASSA could become the driving force in actuarial education for Southern Africa. Many students from neighbouring countries already study actuarial science at South African universities.

4.2.9 Utilise The Strong University-based Education System present in South Africa

4.2.9.1 Last, but by no means least, the establishment of a local education system could allow ASSA to make use of the strong system of university-based actuarial education present in South Africa.

4.2.9.2 South Africa has four long-established university programmes (and three newer ones) offering actuarial education. As mentioned in ¶2.5.6, at the last count these programmes accepted a total of some 800 new first-year students per year. Almost all actuarial students in South Africa will study actuarial science at one of these universities.

4.2.9.3 The strong reliance already placed on university-based actuarial education in South Africa should facilitate an integrated approach, as used in Australia. This could not easily be achieved in the UK or USA, where university programmes are much less popular and thus do not have such influence.

4.3 POSSIBLE DISADVANTAGES OF LOCAL EDUCATION AND LICENSING

Several items mentioned here are more perceived drawbacks than actual drawbacks, but perceptions are important (even if unfounded) and ASSA will need to deal with these if it is to successfully change the education of actuaries in South Africa.

4.3.1 STANDARDS MAY NOT BE KEPT SUFFICIENTLY HIGH

4.3.1.1 There is a fear, as can be seen from the results of the student survey discussed earlier, that standards may not be adequately maintained by ASSA or that external influences (e.g. South African government, which may have other objectives) may result in a lowering of standards over time.

4.3.1.2 Standards would be within the control of ASSA and so they should be able to be set at an appropriate level. A challenge that ASSA may face, though, is how to maintain a dynamic education system within the constraints that could be imposed on it by national education imperatives.

4.3.1.3 A valid defence against any external pressure to lower standards is that standards must be maintained in order to maintain the profession's international recognition.

4.3.1.4 Several South African universities have extensive exemption recognition agreements with the Faculty and Institute of Actuaries, many of which have been extended to new (senior) subjects in recent years. This demonstrates the high regard in which the UK profession holds these universities. In fact there are more universities in South Africa that offer actuarial-science programmes than there are in the UK, and in fact more than there are in almost any other country, including those that use a university-based system for actuarial qualification.

4.3.1.5 The ongoing maintenance of standards is, however, a critical point for the success of a local education and qualification system.

4.3.2 A LOCAL QUALIFICATION WILL NOT BE AS PRESTIGIOUS AS AN OVERSEAS ONE

4.3.2.1 If standards are maintained, the qualification will build a prestige of its own. As mentioned in White (1977), the prestige of the qualification should be of little concern to the profession as a whole, and any individual for whom this is a concern can still elect to additionally qualify as an FIA or FFA.

4.3.2.2 This issue could also be managed through the establishment of mutual recognition agreements between the Actuarial Society of South Africa and the most highly regarded actuarial associations worldwide, e.g. the Faculty of Actuaries, Institute of Actuaries, Society of Actuaries, Institute of Actuaries of Australia etc.

4.3.3 ASSA FELLOWS MAY BE LESS MARKETABLE ABROAD

There is a fear that actuarial associations and employers abroad may view a South African qualification as inferior to a UK qualification. It would be essential before embarking on such a venture that ASSA establish mutual recognition agreements with the major actuarial associations worldwide. Such agreements would allow Fellows of ASSA to become Fellows of other associations, possibly after suitable work experience was gained in the country concerned. Perceptions of inferiority may persist until a local qualification builds a reputation.

4.3.4 Discourage Immigration of Actuaries

If actuaries coming to South Africa from abroad have to pass a local examination before being allowed to practise as actuaries it may discourage them from coming. This fear may be reduced by the implementation of appropriate mutual recognition agreements with overseas associations. ASSA needs, however, to ensure that people practising as actuaries in South Africa are adequately trained to do so.

4.3.5 Variations in University Standards

If a significant part of the education of local actuaries is entrusted to local universities there is a risk that standards between the universities are not equivalent. This would need to be monitored, and a responsible actuary appointed for each university to ensure the maintenance of standards.

4.3.6 Actuaries may elect to qualify through a UK Body rather than through ASSA

4.3.6.1 If a local qualification is established there is the risk that students may still elect to qualify through the Institute or Faculty of Actuaries as opposed to ASSA. Employer and student support for a local qualification is thus very important at the outset.

4.3.6.2 From the survey of students discussed above there is evidence to suggest that, provided the other concerns can be dealt with, students believe that a local qualification is appropriate (albeit not preferred at this stage), but that many would also like to have the UK fellowship designation.

4.3.6.3 While this option may be available to students, ASSA does not need to encourage it by hosting the UK profession's fellowship examinations in South Africa.

4.3.6.4 It will thus be important for ASSA to properly market any planned changes to the education and qualification system appropriately.

4.3.7 It is Just The Principles That are Important

It could be argued that it is just the principles that are important and not the conditions of the particular environment. While it is undoubtedly true that principles are important, so too is the particular environment. The UK professional bodies believe this to be the case, as evidenced by the fact that their fellowship examinations require local knowledge and that syllabuses are regularly changed to keep pace with legislative changes. This is also the view of the IAA.

4.3.8 Resources Required

4.3.8.1 It may not be easy to obtain all the necessary skills to successfully run local education and examinations (an ongoing issue for the Australian Institute). This will come at a cost, although this cost will be borne out of funds that would have gone to the UK bodies for this purpose.

4.3.8.2 Furthermore, optimal use should be made of the existing university education that is already in place.

5. THE SOUTH AFRICAN REGULATORY ENVIRONMENT FOR EDUCATION

5.1 THE BROAD CONTEXT

5.1.1 Since the advent of democracy in South Africa in 1994, the education and training sector has received a great deal of attention as a sphere of society in which significant transformation was necessary, and subsequently a number of national imperatives found expression in legislation as early as 1995. The regulatory environment created around education and training endeavours in the few years after 1994 was created relatively quickly, compared with similar developments in other countries, and was, in part (and understandably), politically motivated. The fast initial development and implementation of the policy and systemic initiatives has necessitated adaptation in the subsequent review and progressive real-world application. This process of review and adaptation is ongoing, and creates a sometimes unsure, but mostly responsive approach to the regulatory frameworks.

5.1.2 A very pertinent example of this reflective adaptation of the environment is the review, commissioned by the South African Qualifications Authority (SAQA) in September 2005, of possibilities for integration of professional qualifications on the 'National Qualifications Framework' (NQF). This review, and the potential implementation of the final recommendations, could have a significant impact on the approach taken by ASSA with regard to local actuarial examinations.

5.1.3 In order to gain a better grasp of the regulatory environment as it currently stands, it is necessary to pay attention to a number of pieces of legislation and ancillary initiatives.

5.1.4 The South African Qualifications Authority Act, 1995[9]

5.1.4.1 The South African Qualifications Authority (SAQA) Act was the first act, promulgated after 1994, to directly promote change in the education and training domain. The act called into being the South African Qualifications Authority (SAQA), with the primary functions of:

- overseeing the development of the NQF;
- managing the processes of registering and accrediting standards-generating and quality-assurance bodies; and
- overseeing the implementation of the NQF, including registration of national standards and qualifications.

5.1.4.2 The SAQA Act also created two other types of entities, namely:

- National Standards Bodies (NSBs); and
- Education and Training Quality Assurance Bodies (ETQAs);

detailed regulations for these bodies being published in 1998.

5.1.4.3 ETQAs are tasked with "auditing and monitoring achievements in terms

9 Act no. 58 of 1995

of national standards or qualifications" and are accredited for this task by SAQA according to (often niche) economic sector, social sector or education and training sub-system sector. The regulations further state that, although responsible for the accreditation of providers of education and training services, ETQAs may not be providers of education and training themselves.

5.1.4.4 Specific provision is made in the regulations for professional bodies to apply for accreditation as ETQAs.

5.1.5 Higher Education Act, 1997

5.1.5.1 In 1997, the Higher Education Act[10] was published, with the aim (amongst others) of establishing "a single co-ordinated higher education system which promotes co-operative governance and provides for programme-based higher education". The act created the Council on Higher Education (CHE), with a specified sub-committee called the Higher Education Quality Committee (HEQC).

5.1.5.2 In an amendment to the Act in 2001, the HEQC was formally accredited as the ETQA primarily responsible for higher education. This meant that all other ETQAs active in the higher education domain had to contend with the requirements of the HEQC. The HEQC has been attempting to discharge this duty through memoranda of understanding (MoUs) with other ETQAs.

5.1.5.3 The final fact to note with regard to the Higher Education Act is the definition it sets for the 'provision of higher education':

- the registration of students for whole qualifications or unit standards at or above (NQF) level 5;
- responsibility for the provision and delivery of the curricula;
- the assessment of students regarding their learning programme; and
- the conferring of qualifications in the name of the higher-education institution concerned.

5.1.6 Skills Development Act, 1998

The Skills Development Act (SDA) of 1998[11] was aimed at strategically enhancing the 'National Skills Development Strategy' and focuses on improving and enhancing workplace skills and skills development. The SDA created, amongst other structures, Sector Education and Training Authorities (SETAs) to manage the skills development (with the funds provided through the National Skills Fund levies) in defined economic sectors. All SETAs are registered with SAQA as ETQAs.

5.1.7 The National Qualifications Framework

5.1.7.1 One of the key unifying elements of the South African education and training environment is the NQF. As stated in the SAQA Act, the objectives of the NQF are to:

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10 Act no. 101 of 1997
11 Act no. 97 of 1998

– create an integrated, national framework for learning achievements;
– facilitate access to, and mobility and progression within, education, training and career paths;
– enhance the quality of education and training;
– accelerate the redress of past unfair discrimination in education, training and employment opportunities; and thereby
– contribute to the full personal development of each learner and the social and economic development of the nation at large.

5.1.7.2 This ambitious initiative necessitated systemic change, since it brought together previously diverse methods and approaches to learning in one unified structure. It emphasises formal recognition of learning and the accompanying registration of learning achievements, while encouraging a culture of life-long learning and articulated learning pathways.

5.1.7.3 The NSB Regulations (1998) described the structure of the NQF, with 8 levels of increasing complexity of learning achievements. The current NQF structure can be depicted as shown in Table 6.

Table 6. Current NQF structure

NQF level	Band	Qualification types
8	Higher education and training	Post-doctoral research degrees
		Doctorates
		Masters degrees
7		Honours degrees
		Professional qualifications
6		National first degrees
		Higher diplomas
5		National diplomas
		National certificates
4	Further education and training	National certificates
3		
2		
1	General education and training	National certificates

5.1.7.4 If ASSA engages in the local offering of actuarial examinations, it will most certainly be facilitating 'learning achievements' as defined on the NQF, and more specifically in the higher-education band and NQF level 7. This would involve ASSA's activities in the regulatory domain outlined in the Acts above, and would force engagement with the realities and complexities of the NQF and other legislation.

5.2 CURRENT SAQA REVIEW OF PROFESSIONAL QUALIFICATIONS AND THE NQF

5.2.1 In late 2005, SAQA convened a high-level panel to review the inclusion of professional qualifications on the NQF. The investigation was the result of requests for such a study from various professional bodies, concerned with the inappropriate way in which professional qualifications and professional registration had been dealt with in previous years.

5.2.2 It was envisaged that the study would consist of three stages:

(1) an investigation of all qualifications currently registered as 'professional' on the NQF, international trends in handling professional qualifications on national qualification frameworks, feedback from professional bodies (through surveys and interviews) and initial recommendations;

(2) invitation for public comment and review of the initial research report,[12] with subsequent recommendations by a review panel (to have been completed by late October 2006) (An open meeting was held in Gauteng on 20 October 2006, at which the review panel presented its provisional report[13] for comment); and

(3) consideration of the final recommendations for implementation by the SAQA Board.

5.2.3 This study is particularly relevant to the issue at hand for ASSA, since it reflects current thinking on the interaction between professional bodies and the South African regulatory environment and will most probably form the basis for the approach SAQA takes to professional qualifications and the NQF in future.

5.2.4 For these reasons, frequent reference is made below to the findings and conclusions of the SAQA review reports in further discussion of the realities and opportunities facing ASSA.

5.3 PROFESSIONAL BODIES AND PROFESSIONAL QUALIFICATIONS AND DESIGNATIONS

Whenever one engages in a substantially regulated environment, such as the one governing education and training in South Africa, it becomes essential to have commonly agreed-upon definitions for the core concepts involved. This in itself is often difficult as definitions regularly evolve with greater understanding or changes in paradigms.

5.3.1 PROFESSIONAL BODIES

5.3.1.1 In Section 1 of the ETQA regulations of 1998, professional bodies are defined as follows:

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12 South African Qualifications Authority. An investigation into the inclusion of qualifications currently registered as professional on the NQF. Report circulated for public comment in May 2006

13 South African Qualifications Authority. The inclusion of professional qualifications on the South African National Qualifications Framework – Draft recommendations of the Review Panel on Professional Qualifications. Report discussed at meeting on 20 October 2006

> "professional body means a body registered as such in terms of the legislation applicable to such bodies, or a voluntary body performing the functions contemplated for such bodies but not registered as such".

5.3.1.2 The review panel conducting research on professional bodies in 2005–2006 proposes a more descriptive definition in the SAQA research report, which clearly includes ASSA as a professional body for the purposes of the review:

> "A professional body is a body appointed to represent a recognised 'community of expert practitioners' and as such it devises, informs, monitors and continually updates the benchmark standards of competence, both academic and practical, required in the practice of the profession for which it is responsible. It is governed either by a statute or a constitution and has the necessary full time resources to carry out its functions. Major functions include quality assurance, assessment of professional competence, the conferring of professional designations and the right to practice, development and management of a code of professional/ethical conduct and ensuring the currency of knowledge of members through the implementation and monitoring of Continuing Professional Development (CPD) programmes."

5.3.1.3 A distinction that must be noted is the one between statutory and non-statutory professional bodies. Statutory bodies are created as juristic persons through legislation and therefore have legally mandated roles. Non-statutory professional bodies (such as ASSA) have no legislated role in regulating a given profession, yet the public sector have, in many of these cases, over a period of time recognised the professional bodies' role in representing a profession and governing professional requirements and standards. The definition used for the purposes of the SAQA review includes both statutory and non-statutory professional bodies.

5.3.2 'Qualifications' and 'Designations'

5.3.2.1 The differences in the definitions of professional qualifications and professional designations emerged as one of the key elements of the discussion on professional qualifications in the SAQA review panel's draft recommendations.

5.3.2.2 The definitions provided in the October 2006 recommendation report read as follows:

> "Professional Qualification:
>
> "A Professional Qualification is based on the learning requirements for a designated profession or professional category. The attainment of a professional qualification does not in itself automatically lead to a professional designation. A professional qualification must achieve the exit level outcomes of the qualification if it is registered on the NQF for the purpose and must thus be quality assured by the designated regulatory authority. A professional qualification may not be revoked.
>
> "Professional Designation:
>
> "A Professional Designation is a title/status that is conferred by a professional body, which indicates the professional status of the individual and the right to practise in the particular

field of expertise governed by that Body. Retention of this status is dependent upon compliance with the stated requirements of the Body concerned. These would typically include compliance with a Code of Professional Conduct, compliance with the Continuing Professional Development requirements and the payment of fees. An important corollary to this is that a designation is not a permanent status and may be revoked if non-compliance with any of the specified requirements occurs."

5.4 THE POSITION OF ACTUARIAL EDUCATION IN THE SOUTH AFRICAN REGULATORY CONTEXT

5.4.1 Is There Currently an Actuarial 'Qualification'?

5.4.1.1 Both ASSA and the Faculty and Institute of Actuaries have taken to describing completion of all actuarial examinations, or fellowship of these bodies, as 'qualification' (see for example the profession's response to the Morris Review). In terms of the definitions applied in the SAQA review reports, completion of all required actuarial examinations does in fact meet the requirements stated in the definition for a professional qualification. The concern that arises is that no such 'professional qualification' for actuaries is currently registered on the South African NQF (although many other professional bodies' qualifications also lack such registration).

5.4.1.2 The problem with not registering a professional qualification in the current context is that no qualifications are formally recognised in South Africa if they do not appear on the NQF.

5.4.1.3 Should nothing change in the current regulatory context, students passing South African actuarial exams will not be attaining any nationally recognised qualifications.

5.4.1.4 According to the above definition, the term 'Fellow of the Actuarial Society of South Africa' (FASSA), would be classified as a professional designation. The progression assumed in the SAQA review reports supposes that a professional designation will follow a professional qualification, but the latter is not currently formally registered.

5.4.2 Approach taken by Other Professional Bodies

5.4.2.1 Some professional bodies have over the past few years registered the completion of all requirements for membership of a professional body as professional qualifications on the NQF. The South African Institute for Chartered Accountants (SAICA), for example, registered the professional qualifications "Chartered Accountant: Auditing" and "Chartered Accountant: Financial Management" as professional qualifications.

5.4.2.2 This course of action has immediate implications in the South African context, with which bodies like SAICA have had to grapple, according to Adri Kleinhans of SAICA.[14] The most direct implication is that any NQF-registered qualification that is offered in South Africa has to be offered by a provider that is accredited by an ETQA. For

14 E-mail on 13 September 2006

this purpose, SAICA (like all other professional bodies choosing this route) has had to submit to a time-consuming and bureaucratic process to register and become accredited as an ETQA. This has also forced SAICA to engage in the involved process of setting up a memorandum of understanding with the Higher Education Quality Committee, since they are the 'superseding' ETQA for all qualifications offered in the higher education band.

5.4.2.3 Another key regulatory challenge facing professional bodies that register their qualifications on the NQF is that both the Higher Education Act and the ETQA regulations currently forbid the possibility of an 'assessment only' body, defined as an educational entity that assesses learning and competence, without being involved in the provision of the learning involved in the curriculum. This is a very problematic situation for many professional bodies who have for years been assessing competence and learning as a final step for recommending or allowing professional membership, without wanting to engage in the provision of learning (as it will probably be for ASSA, which currently supports a similar assessment-only approach).

5.4.2.4 It is these (and other) complexities resulting from the professional bodies' attempt to contribute to the NQF's imperative of creating 'an integrated, national framework for learning achievements' that has resulted in the current review of the regulatory environment as it applies to professional qualifications.

5.4.2.5 Many professional bodies have, either through a perception of non-alignment with the NQF and its accompanying regulations or through ignorance, not been attempting to engage with the NQF and the other regulations governing education and training at all. While for most professional bodies the choice to engage with the NQF or not, has up to now had very little impact, this situation could soon change in two meaningful ways as the result of the current review of professional qualifications:

– it may become compulsory to register all professional qualifications and designations on the NQF (with all the regulatory implications that go along with such action); and
– the NQF structure may be adapted so that it is much more receptive to the rather unique structure of professional qualifications, which could make inclusion of these qualifications easier and more beneficial through enhanced (national and international) recognition of achieved learning.

5.5 INTERPRETING RECOMMENDATIONS MADE IN THE SAQA REVIEW REPORTS ON PROFESSIONAL QUALIFICATIONS

5.5.1 Review Reports' Recommendations

5.5.1.1 Given the current situation of mixed levels of compliance, apathy and ignorance on the side of professional bodies with regard to the NQF's inclusion of professional qualifications and with no conclusive precedents to work with, it may be sensible for the South African actuarial profession to allow itself to be guided by the findings and recommendations of the two SAQA reports that have been forthcoming from the current study on the involvement of professional qualifications on the NQF. These will, in all likelihood, form the basis of the next few years' thinking and even policy development and regulation on this subject.

5.5.1.2 The key points of the recommendations made by the task team in the SAQA investigation report of May 2006[15] are:

(a) "One of the benefits of inclusion on the NQF and its structures that Professional Bodies identified was increased credibility and status for Professionals, Professional Qualifications and Professional Bodies, both nationally and internationally.

(b) "As the integrated framework for all learning achievements, the NQF is of essence an all-encompassing framework for education and training in South Africa. There is no doubt that it should therefore aim to include all qualifications.

(c) "It is therefore recommended that serious consideration be given to facilitating the inclusion of professional qualifications of both statutory and non-statutory professional bodies.

(d) "Having taken into account the range of professional bodies that participated in the research study, it is however proposed that, in the case of non-statutory bodies, the decision to register qualifications be left to the individual professional bodies, at least initially until systems have been sufficiently tested and streamlined to facilitate the participation of the smaller bodies, which may not have the resources to cope with the current processes and requirements."

5.5.1.3 The key points made by the review panel in the SAQA draft recommendations of October 2006 are:

(a) "The revised definition of a professional qualification should be adopted to reflect, amongst other things, that professional qualifications need not include all the learning requirements for professional registration.

(b) "Professional qualifications should be included on the NQF. The recommendation implies that quality assurance rights and requirements will go hand-in-hand with registration, as will national recognition and articulation possibilities with other nationally registered qualifications.

(c) "Professional Designations should not be included in the NQF, although professional bodies are encouraged to publish the standards for professional competency in a form that supports the NQF objectives of integration, coherence of education and training requirements, articulation and portability".

5.5.2 Interpreting Recommendations for ASSA's Purposes

5.5.2.1 These recommendations confirm the fact that no regulations currently exist that would force any professional body to register professional qualifications on the NQF.

5.5.2.2 ASSA should therefore be able to set educational or other requirements for fellowship of ASSA without contravening any current regulations. It certainly is the spirit, if not the letter, of the NQF and similar legislation, that all formal learning achievements be registered on the NQF and monitored and audited in a way that promotes national imperatives. In this sense, it is regrettable that participation in such a laudable national process is so fraught with complexity and bureaucracy.

15 South African Qualifications Authority. An investigation into the inclusion of qualifications currently registered as professional on the NQF. Report circulated for public comment in May 2006

5.5.2.3 While this interaction between professional qualifications and the NQF is being resolved, it seems that there are no current regulations preventing implementation of local actuarial examinations towards professional membership (fellowship) of ASSA.

5.5.2.4 That being said, two key factors must be kept in mind:

– Significant progress has been made in South Africa regarding educational quality literacy; to such an extent that the registration of qualifications on the NQF and the accreditation status of the providers of such qualifications is increasingly coming under scrutiny from prospective students (and their parents). Any body offering 'qualifications', whether registered or not, ignores the growing public demand for explicit, rigorous and transparent quality-assurance systems at their own peril.
– Given the increasingly regulatory approach taken to education and training in South Africa over the past decade, it is very likely that the offering of professional qualifications will in future be similarly regulated and that the compulsory registration of qualifications, and the accreditation of providers of such qualifications, cannot be far off. The SAQA investigation and research into professional qualifications is still at a recommendation stage, and the outcome of the study continues to be unpredictable.

5.5.2.5 To this end, it would be advisable to consider the structures and quality assurance systems that are currently required for ETQAs and providers, in context with what is being proposed by the SAQA review reports.

5.5.2.6 Anticipating the potential future regulatory demands will be key to the successful implementation of a local actuarial examination system.

6. POSSIBLE APPROACHES AVAILABLE TO ASSA

6.1 GENERAL

6.1.1 No matter what route ASSA decides to follow (and that includes doing nothing new) it will be necessary for it to enter into discussions relating to the South African professional-qualifications environment.

6.1.2 An important first step in this direction was taken by ASSA when it sent a representative to attend the SAQA stakeholder workshop on 20 October 2006 in Gauteng, where the recommendations of the review panel were made public and discussed.

6.2 POSSIBLE OPTIONS

6.2.1 Below are four broad options that ASSA could follow regarding the education and licensing of actuaries. They follow a progression of increasing localisation, ending with what might be considered to be the long-term ideal.

6.2.2 The detail as to the precise form the final two options in particular might take will be the result of discussion and debate within the profession.

6.2.3 The Faculty and Institute of Actuaries gave ASSA notification late in 2006 that as from the start of 2007 they would no longer be prepared to make available a South African fellowship (specialist applications) examination. Despite discussions involving the various presidents it was not possible for ASSA to convince the Faculty and

Institute to reverse this decision. The reason given by the Faculty and Institute for this was the low take-up rate by South African students for this option.

6.2.4 The four broad options considered to be available are now discussed in turn. (In the light of paragraph 6.2.3, the continuation of the pre-2007 system in South Africa was not considered to be an option.)

6.2.5 Option 1: Revert to a UK Qualification, but with Fellowship of ASSA requiring the Passing of a Practice Module followed by CPD

6.2.5.1 From September 2008 all new qualifiers will need to pass a local practice module in order to become Fellow members of ASSA anyway.

6.2.5.2 This goes some way to addressing the potential problem of having local actuaries without any local knowledge.

6.2.5.3 The cost of setting local core reading and examinations is no longer incurred.

6.2.5.4 By virtue of the fact that it is an addition to what is required for the FIA or FFA designation, ASSA will be setting a higher standard for its fellowship than are the Faculty and Institute of Actuaries. This, in turn, may lengthen slightly the time taken for students to become Fellows.

6.2.5.5 The critical drawback of this approach, though, is that it is unlikely that CPD could provide the breadth and depth of knowledge required by a local actuary. Thus, while this may form a short-term solution, it is unlikely to be a viable long-term solution.

6.2.5.6 This would be ASSA's first official foray into independent education in the South African context, since this module is not offered on behalf of any other organisation, but curriculated, administered, assessed, quality-assured and certified locally.

6.2.5.7 This would imply that, should registration of actuarial professional qualifications eventually come into effect, evidence would need to be provided of the rigour of ASSA's educational initiatives, as well as the extent to which these activities contribute to national educational imperatives (such as the improvement of quality and the broadening of access and redress, amongst other things).

6.2.5.8 The continuation of this course of action without any formal registration of the learning achievements on the NQF would, however, appear to be permissible according to the recommendations of the SAQA review panel in its review of the inclusion of professional qualifications on the NQF.

6.2.6 Option 2: Revert to a UK Qualification, but with Fellowship of ASSA requiring the Passing of a South African Fellowship Examination

6.2.6.1 This option is similar to the pre-2007 position in South Africa, except for the compulsory nature of the localised fellowship examination (for membership as a Fellow of ASSA), and is a step forward from Option 1.

6.2.6.2 If such examinations were to be made available again under the auspices of the Faculty and Institute of Actuaries, negotiations would need to take place between the South African and UK actuarial associations to ensure the long-term stability of such an examination.

6.2.6.3 This option goes a significant way to addressing the potential problem of local actuaries with insufficient local knowledge, and should be much better in this regard than relying on a practice module (as in Option 1) to achieve this.

6.2.6.4 This option, though, is limited in terms of what localised education could be made available as it is only at the final fellowship examination stage that local content could be introduced. There is also the risk that it might not be sustainable in the longer term, particularly as areas of practice may diverge between South Africa and the UK (e.g. healthcare financing) making it difficult for the UK associations to quality-control examinations in these areas.

6.2.6.5 This option could possibly work without a compulsory practice module (as this knowledge would be tested (at least implicitly) in the local fellowship examination. (Attention would then need to be given to students who take the research route to fellowship and what local knowledge they would require for fellowship of ASSA.)

6.2.6.6 There is the risk, though, that students, having come so far down the route of a Faculty and Institute of Actuaries' qualification, would just choose not to write the South African fellowship examination and hence not become Fellows of ASSA. This would clearly be detrimental to the development of the profession in South Africa.

6.2.6.7 An option here would be not to host the UK fellowship examination in South Africa. Students would still be free to write it, but it would not be facilitated by ASSA. This, though, is probably not the ideal solution.

6.2.6.8 Even with this, students could still be completing the UK fellowship examination and applying for fellowship of ASSA through whatever mutual recognition agreement might be in place.

6.2.6.9 The same regulatory implications arise as in Option 1. ASSA would now be officially engaged in the provision or assessment, and certification, of education. Again, this does not result in regulatory enforcement of compliance at this stage, although this might change if the SAQA Board's response to the review and recommendation process currently in progress so requires.

6.2.7 Option 3: Make More Extensive Changes to the Requirements for Fellow Membership of ASSA (and the designation FASSA) than just the Passing of a South African Fellowship Examination (as in Option 2)

6.2.7.1 ASSA could make its requirements for Fellow membership different from those of the Faculty and Institute of Actuaries, in such a way that it became more attractive for students to join and qualify through ASSA. For example:

- Drop or replace some of the examinations required, e.g. CA2 (modelling).
- Offer university exemptions from subjects (e.g. CA2 (modelling) and CT9 (business awareness module)) that are not offered by the Faculty and Institute of Actuaries.
- Offer exemptions to students who study actuarial science modules at a local university for non-degree purposes. This option is not currently available through the Faculty and Institute of Actuaries, and would encourage local students to take ad-hoc subjects through a university where this may suit them (rather than having to complete an entire degree or diploma as is required by the Faculty and Institute of Actuaries).

– Offer a replacement module, e.g. for the business awareness module, but made available to students after, say, completion of one year of study at a local university (this would have the added benefit of encouraging students to join ASSA earlier than is the case at present.)
– Recognise new modules (or localised modules) where the subjects offered by the Faculty and Institute of Actuaries are not appropriate for local practice, e.g. health and care technical.

6.2.7.2 Many of the above items could be implemented without requiring ASSA to extend its provision of education and examination beyond the fellowship examination envisaged under Option 2 (which, although under the auspices of the Faculty and Institute of Actuaries, would essentially be ASSA's responsibility).

6.2.7.3 While doing this ASSA should start to put in place sound quality-assurance mechanisms that will be necessary in the (likely) event of changes in local education-related regulatory requirements or if ASSA were to choose, or be forced, to register a professional qualification in the NQF.

6.2.7.4 Key to the success of this approach would be the recognition by other (international) actuarial organisations of the professional status of registered ASSA members (i.e. would a student attaining the professional designation FASSA be able to readily attain fellowship of bodies such as the Faculty of Actuaries, Institute of Actuaries, Society of Actuaries or Institute of Actuaries of Australia?).

6.2.7.5 This option is a further step towards ASSA's offering of its own professional qualification, and should be capable of being introduced in the current hiatus of the local regulatory environment.

6.2.7.6 This may thus be a good option to pursue initially. However, it may not be sustainable in the longer term unless ASSA becomes more involved than solely at the fellowship examination stage.

6.2.8 Option 4: Establish a Local Actuarial Qualification

6.2.8.1 This option brings with it all the advantages discussed in section 4.2. The perceived associated disadvantages outlined in section 4.3 would need to be managed, though, for this option to prove successful.

6.2.8.2 The implementation of this option would not be straightforward and would require a time and resource commitment from ASSA. It should thus be seen as a medium- to long-term goal.

6.2.8.3 This route may in fact become necessary in the not-too-distant future if ASSA wishes to continue to offer the professional designation of FASSA (since South African regulations may require a formally registered professional qualification as a pre-requisite for the assignment of the professional designation FASSA).

6.2.8.4 This professional qualification ("actuary" or similar) would be awarded on completion of the current or similar requirements for fellowship, and would be sufficient for the initial award of the designation of FASSA (which designation could still be revoked in the event of misconduct etc.).

6.2.8.5 The requirements for fellowship could be reviewed, for example along

similar lines to those outlined under Option 3 above. The inclusion of a university qualification as one component of the professional qualification, as is common in most large professions, could also be considered.

6.2.8.6 To assist in cost-containment for ASSA, it may be possible to reach an agreement with the Faculty and Institute of Actuaries, as has been done by the Institute of Actuaries of Australia, for local students who do not gain university exemptions in certain subjects to have access to the examinations of the UK body (which would then be recognised as appropriate by ASSA).

6.2.8.7 Under this option ASSA could also consider transferring large parts of the education to the universities, while retaining control over syllabuses. Most of the actuarial subjects are currently offered at the larger universities, and it makes sense for ASSA to draw on, and help develop and enhance, this resource. The advantages of utilising the strong university system in South Africa are discussed in section 4.2.9 above.

6.2.8.8 Alternatively (if the options in 6.2.8.6 & 6.2.8.7 were not made use of) ASSA would need to consider the setting of its own examinations for all subjects, which would be a substantial drain on its resources at this stage.

6.2.8.9 ASSA would need to establish itself as the appropriate quality-assurance body for this qualification. Currently this course of action would necessitate ASSA registering and being accredited as an ETQA for the actuarial sector, with a formal professional qualification registered on the NQF. Under current legislation that implies that ASSA would not be able, in addition, to provide tuition itself for such a qualification.

6.2.8.10 Since only one ETQA may be accredited for any given economic sector, this course of action would provide ASSA with the primary oversight over the education of local actuaries.

6.2.8.11 More attention is given in the next section to issues that would need to be addressed by ASSA for the successful implementation of this option.

6.3 ISSUES REQUIRING ATTENTION FROM ASSA

Some of the key issues that will require attention from ASSA, if it intends to make significant changes to the education and licensing of actuaries in South Africa, are discussed below (not all of these will be necessary if planned changes are not significant).

6.3.1 STAKEHOLDER BUY-IN MUST BE SOUGHT

6.3.1.1 Any significant amendments to the education and licensing of actuaries will need the buy-in of the major stakeholders, namely the students, the Fellows, the employers and the universities.

6.3.1.2 Accreditation agreements will need to be entered into at an early stage with local universities, as their involvement is essential to the process. Universities will, for example, probably need to cater for some additional part-time (and possibly correspondence) students, which could have human-resource implications for them.

6.3.1.3 It will also be important to get buy-in from the Faculty and Institute of Actuaries (and make the necessary financial arrangements with them) as ASSA will need to rely on their support, for example for the offering of certain of their examinations and

distance-learning material to South African students. In late 2006 the Faculty and Institute of Actuaries confirmed their support for such an initiative by ASSA.

6.3.1.4 The International Actuarial Association will also need to be satisfied with the standard of any new local qualification.

6.3.2 Fellowship Examinations to be made available

6.3.2.1 ASSA will need to decide whether or not to continue with all the South African examinations currently available.

6.3.2.2 Local universities will need to be encouraged to offer more tuition for the local fellowship subjects.

6.3.3 Fellowship Tuition Material

6.3.3.1 The perceived disparity between the standards of the educational material available for students taking the UK and South African modules by correspondence is undoubtedly a significant factor in the low take-up rate of the local fellowship subject. This needs to be addressed urgently if ASSA wishes students to buy in to the local fellowship examinations.

6.3.3.2 External organisations, such as the UK's Actuarial Education Company (ActEd) (which already has a significant body of material that would remain relevant for most subjects), should be approached with a view to their production of educational material of a similar standard to that available for UK-based subjects. This will most likely need to involve one or more local persons too.

6.3.3.3 South Africa could additionally take the approach used in Australia, namely that students (for their equivalents of both the specialist technical and the specialist applications subjects) need to submit assignments and are expected to participate in tutorials rather than engaging in distance learning alone. These assignments and tutorials could be arranged through local universities if the profession chooses not to be involved initially.

6.3.4 Core Reading needs to be maintained

6.3.4.1 Core reading (or appropriate texts) needs to be in place for all local subjects. These need to be regularly updated.

6.3.4.2 It has proved difficult in the past for ASSA to find willing volunteers (even paid ones) to take on this responsibility, and there are still significant differences between the depths of core reading available for the various local fellowship subjects. This needs to be addressed regardless of which option is followed.

6.3.5 Engagement in the South African Qualifications Environment

6.3.5.1 As mentioned earlier, no matter what approach ASSA decides to follow, it will be necessary for it to enter into discussions relating to the local qualifications environment.

6.3.5.2 Engaging with SAQA in the current process of review would be a useful first step in this direction.

6.3.5.3 Ultimately ASSA will need to position itself as the body that quality-assures the actuarial qualification in South Africa.

6.3.6 Mutual Recognition Agreements

6.3.6.1 An essential element that will need to be in place before any new education system can be launched is the establishment of mutual recognition agreements with the major actuarial associations worldwide, e.g. the Institute of Actuaries, the Faculty of Actuaries, the Society of Actuaries and the Institute of Actuaries of Australia.

6.3.6.2 Additionally, ASSA will need to consider to what extent it will give credit to students who have written the examinations of these bodies.

6.3.7 Significant Additional Infrastructure will need to be put in place

6.3.7.1 For ASSA to contemplate launching a local qualification it will need to be in a position to record all student details, including examination attempts and results. Such records are currently available for access electronically with the Faculty and Institute of Actuaries.

6.3.7.2 A Director of Education (or Education Manager), as a minimum, or an Education or Certification Board as proposed by Da Silva, Haslam & Jurisich (unpublished), will need to be appointed to take on responsibilities such as:

- overseeing the updating of syllabuses;
- ensuring that educational material is prepared on time;
- approving exemption recognition agreements with universities;
- appointing a Board of Examiners (with a respected chairperson);
- ensuring examinations are set on time; and
- engaging with SAQA etc.

6.3.7.3 ASSA could usefully draw on the experience of the Institute of Actuaries of Australia in this regard, as its student numbers are not vastly different from those of ASSA and it had to set up similar systems after it broke away from the UK profession.

6.3.8 Resourcing

6.3.8.1 Careful financial planning will need to be carried out to ensure that the necessary human and financial resources for a successful roll-out of any plan will be available.

6.3.8.2 The Australian experience of such financial planning may be helpful and it would be worthwhile for ASSA to seek guidance from the Institute of Actuaries of Australia in this regard.

6.3.8.3 Another area in which the Australian situation can be drawn on, in addition to the assistance that could be gained regarding financial planning, is the way in which the Institute of Actuaries of Australia has ensured a lightening of the additional human resource requirements it would otherwise have faced from establishing a local qualification. This has been achieved through its continued utilisation of the (core technical) examinations of the Faculty and Institute of Actuaries, as well as through the extensive reliance the Institute of Actuaries of Australia places on the four accredited Australian universities.

7. SUMMARY OF KEY FINDINGS

7.1 There is a strong, and growing, interest in the actuarial profession in South Africa from students, demonstrated by the fact that over 750 students wrote examinations of the Faculty and Institute of Actuaries in South Africa in the September 2006 examination session (i.e. more than the number of Fellow members of ASSA), and by the fact that approximately 800 new students enter actuarial-science programmes at South African universities each year.

7.2 From sections 2.4 and 2.5 it can be seen that all of the large and medium-sized actuarial associations worldwide (other than ASSA) have their own examinations, which must be passed for Fellow membership, unless their members are drawn from Fellows of another actuarial association in the same (or neighbouring) country; or they have a very long-established history of relying upon a university-based system within their country for almost all of the education of actuaries. The larger actuarial associations place much weight on the fact that their Fellows have suitable local training to ensure that they can maintain the profession's standards.

7.3 Following the decision of the Faculty and Institute of Actuaries at the end of 2006 to withdraw the South African specialist applications (fellowship) examination (which had been offered under their auspices since 2003), a change in the South African education system was inevitable to enable South African actuarial students to be examined on local practice.

7.4 Four broad options have been suggested for ASSA, ranging from simply reverting to the UK qualification supplemented by a practice module and CPD, through to the establishment of a local actuarial qualification.

7.5 A local system of education and licensing of actuaries would have many advantages for ASSA (see section 4.2). The main benefits include the improvement of the local relevance of education (by producing actuaries better qualified to practise in South Africa), and assistance in the development of a learning profession, more adaptable to change.

7.6 The potential downsides of this should largely be able to be managed, but constant vigilance would be required to ensure, in particular, that standards are maintained.

7.7 The implementation of a local actuarial qualification would not be straightforward and would require a time and resource commitment from ASSA. There are several key issues that will require attention from ASSA, if it intends to make significant changes to the education and licensing of actuaries in South Africa (discussed in section 6.3), not least of which includes the winning of the support of the major stakeholders (i.e. students, universities, ASSA Fellows and the major employers).

7.8 The experience of the Institute of Actuaries of Australia could be of great relevance for ASSA if it decides to establish a local actuarial qualification, as the Institute of Actuaries of Australia successfully launched a local education system of its own, which is highly regarded worldwide.

7.9 The Institute of Actuaries of Australia has kept the additional human-resource requirement of such a venture down by continuing to make use of the (core technical) examinations of the Faculty and Institute of Actuaries, as well as by placing extensive reliance on the four accredited Australian universities.

7.10 The strong reliance already placed on university-based actuarial education in South Africa should facilitate an integrated approach, as used in Australia. This could not easily be achieved in the UK or USA where university programmes are much less popular and thus do not have such influence.

7.11 No matter what route ASSA decides to follow (and that includes doing nothing new) it will be necessary for it to enter into discussions relating to the South African professional qualifications environment.

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APPENDIX A
LIST OF IAA FULL MEMBERS[16]

Country	Name of association	Year founded	No. of members	Date of count
Argentina	Consejo Profesional de Ciencias Económicas de la Ciudad Autónoma de Buenos Aires	?	181	31/12/04
Australia	Institute of Actuaries of Australia	1897	1 378	30/09/04
Austria	Aktuarvereinigung Österreichs (AVÖ)	1971	205	16/12/04
Belgium	Association Royale des Actuaires Belges	1895	400	01/02/05
Brazil	Instituto Brasileiro de Atuária (IBA)	1969	736	01/01/05
Canada	Canadian Institute of Actuaries/Institut Canadien des Actuaires	1965	2 759	28/06/04
Cote D'ivoire	Institut des Actuaires de Côte d'Ivoire	1999	7	09/03/05
Croatia	Hrvatsko Aktuarsko Drustvo	1996	48	27/01/06
Cyprus	Cyprus Association of Actuaries	1993	20	17/01/05
Czech Republic	Ceská Spolecnost Aktuár	1992	56	31/12/04
Denmark	Den Danske Aktuarforening	1901	302	16/03/05
Egypt	Egyptian Society of Actuaries	1999	8	01/01/05
Estonia	Eesti Aktuaaride Liit	1999	7	31/12/05
Finland	Suomen Aktuaariyhdistys	1922	106	01/01/05
France (IAF)	Institut des Actuaires	1890	1 471	31/12/04
Germany	Deutsche Aktuarvereinigung e. V. (DAV)	1903	2 420	01/01/05
Greece	Hellenic Actuarial Society	1979	85	01/01/05
Hong Kong	Actuarial Society of Hong Kong	1994	277	31/12/04
Hungary	Magyar Aktuárius Társaság	1991	83	01/01/05
Iceland	Félag Islenskra Tryggingastærðfræðinga	?	16	22/05/06
India	Actuarial Society of India	1944	194	31/12/04
Indonesia	Persatuan Aktuaris Indonesia	1964	125	?
Ireland	Society of Actuaries in Ireland	1972	357	31/12/04
Israel	Israel Association of Actuaries	1946	100	31/12/04
Italy	Istituto Italiano degli Attuari	1897	215	31/12/04

16 Compiled from information gathered from the IAA website

Japan (IAJ)	Institute of Actuaries of Japan	1899	1 102	01/01/05
Japan (JSCPA)	Japanese Society of Certified Pension Actuaries	1989	400	31/12/04
Latvia	Latvijas Aktuaru Asociacija	1997	17	30/01/05
Lebanon	Lebanese Association of Actuaries	2001	10	31/12/05
Malaysia	Persatuan Aktuari Malaysia	1978	34	27/10/05
Mexico	Colegio Nacional de Actuarios A. C.	1967	418	31/12/04
Netherlands	Het Actuarieel Genootschap	1946	803	26/01/06
New Zealand	New Zealand Society of Actuaries	1957	148	31/12/05
Norway	Den Norske Aktuarforening	1904	240	01/01/03
Pakistan	Pakistan Society of Actuaries	?	19	?
Philippines	Actuarial Society of the Philippines	1953	62	31/12/04
Poland	Polskie Stowarzyszenie Aktuariuszy	1991	77	01/06/04
Portugal	Instituto dos Actuários Portugueses	1945	108	31/12/04
Puerto Rica	Academia de Actuarios de Puerto Rico	?	20	31/01/05
Singapore	Singapore Actuarial Society	1976	90	25/02/05
Slovakia	Slovenska Spolocnost Aktuarov	1995	17	?
Slovenia	Slovensko Aktuarsko Drustvo	1997	36	31/12/04
South Africa	Actuarial Society of South Africa	1948	561	31/12/05
Spain (IAE)	Instituto de Actuarios Espa oles	1943	1 450	16/12/04
Spain (CAC)	Col·legi d'Actuaris de Catalunya	1992	373	31/12/05
Sweden	Svenska Aktuarieföreningen	1904	182	21/02/05
Switzerland	Association Suisse des Actuaires	1905	447	01/01/05
Taiwan Roc	Actuarial Institute of the Republic of China	1969	153	31/12/04
UK, England (IoA)	Institute of Actuaries	1848	6 621	31/12/04
UK, Scotland (FoA)	Faculty of Actuaries	1856	1 287	31/12/04
USA (AAA)	American Academy of Actuaries	1965	14 959	31/12/04
USA (ASPPA)	American Society of Pension Professionals & Actuaries	1969	57	11/01/06
USA (CAS)	Casualty Actuarial Society	1914	2 751	01/01/06
USA (CCA)	Conference of Consulting Actuaries	1950	1 070	31/12/05
USA (SoA)	Society of Actuaries	1949	10 856	06/21/04

APPENDIX B
THE QUALIFICATION OF THE FACULTY AND INSTITUTE OF ACTUARIES

B.1 To qualify as a Fellow of the Faculty or Institute of Actuaries a student must pass the following 15 examinations:

- core technical stage:
  - CT1 financial mathematics
  - CT2 finance and financial reporting
  - CT3 probability and mathematical statistics
  - CT4 models
  - CT5 contingencies
  - CT6 statistical methods
  - CT7 economics
  - CT8 financial economics
  - CT9 business awareness module*

- core applications stage:
  - CA1 core applications concepts
  - CA2 modelling course *
  - CA3 communications

- specialist technical stage (two of the following subjects are required):
  - ST1 health and care specialist technical
  - ST2 life insurance specialist technical
  - ST3 general insurance specialist technical
  - ST4 pensions and other benefits specialist technical
  - ST5 finance and investment specialist technical A
  - ST6 finance and investment specialist technical B

- specialist applications stage (one of the following subjects is required):
  - SA0 research
  - SA1 health and care specialist applications
  - SA2 life insurance specialist applications
  - SA3 general insurance specialist applications
  - SA4 pensions and other benefits specialist applications
  - SA5 finance specialist applications
  - SA6 investment specialist applications

B.2 The specialist applications examinations are country-specific and require knowledge of regulation and practice in that country. South African students currently have the option of taking a specialist applications examination (other than SA5) based on the South African environment rather than on the UK environment.

B.3 A subject denoted * is taken as a two-day attendance module. All other examinations are unseen written examinations.

B.4 Exemptions from all the examinations, other than the two two-day modules mentioned above and the final specialist applications examination, are possible. Such exemptions are based on satisfactory performance in approved university examinations.

APPENDIX C
THE QUALIFICATION OF THE SOCIETY OF ACTUARIES

C.1 To qualify as a Fellow of the Society of Actuaries (under the 2000 system) the education and examination requirements were as follows:

- technical subjects:
  - examination P probability
  - examination FM financial mathematics
  - examination M actuarial models
  - examination C construction and evaluation of actuarial models

- validation by educational experience (often referred to as VEE) for: economics, corporate finance and applied statistics (This element essentially gives students credit for having completed suitable studies in the relevant areas elsewhere.)

- associateship professionalism course (often referred to simply as APC)

- additional courses required:
  - Course 5 application of basic actuarial principles (no longer offered)
  - Course 6 finance and investments
  - Course 7 applied actuarial modelling
  - Course 8 advanced specialised actuarial practice, selected from: finance and enterprise risk management; health, group life and managed care; individual insurance; investments; or retirement benefits.

- professional development (comprising 50 units of eligible education within a two-year period, including seminars and the completion of a professional project)
- fellowship admissions course (FAC)

C.2 Fellowship is also possible through mutual recognition agreements to applicants who have fellowship of the Institute of Actuaries, the Faculty of Actuaries, the Institute of Actuaries of Australia or the Society of Actuaries in Ireland (by examination), or are members in good standing of the Canadian Institute of Actuaries or the American Academy of Actuaries. Additionally applicants must have, in the past five years, passed the Society's FAC and met the Society's professional-development requirements.

C.3 The education and examination system is to be revised in 2007.

APPENDIX D
THE QUALIFICATION OF THE INSTITUTE OF ACTUARIES OF AUSTRALIA

D.1 To qualify as a Fellow of the Institute of Actuaries of Australia a student must pass the following examinations:

- part I (foundation):
  - CT1 financial mathematics
  - CT2 finance and financial reporting
  - CT3 probability and mathematical statistics
  - CT4 models
  - CT5 contingencies
  - CT6 statistical methods
  - CT7 economics
  - CT8 financial economics

Part I examinations can be taken either through one of four approved university undergraduate degree programmes (ANU, Macquarie, Melbourne or New South Wales) or by correspondence with the Institute of Actuaries (UK) (as a student member of the Australian Institute).

- part II (actuarial control cycle)
  This subject is taught by approved universities in Australia, and covers the application of actuarial skills to business situations.

- part III (specialisation)
  This part is offered through the Institute of Actuaries of Australia. It builds on the concepts covered in Part II and consists of four half-year subjects chosen from the six below.
  - course 1 investments (compulsory)
  - course 2 life insurance part A and part B
  - course 3 general insurance part A and part B
  - course 4 superannuation and planned savings part A and part B
  - course 5 investment management and finance part A and part B
  - course 10 commercial actuarial practice (compulsory)

D.2 Completion of parts I and II leads to associateship (AIAA).

D.3 Completion of parts I, II and III as well as a professionalism course and suitable practical work experience leads to fellowship (FIAA).

D.4 The part-III courses also offer assignment marking which, from 2007, is expected to be available online. The completion of assignments is compulsory, and it is strongly advised that students also participate actively in tutorials and online discussion groups.

D.5 The course in commercial actuarial practice is another recent innovation by the Australian Institute, and is a combination of a five-day residential course, culminating in an eight-hour computer-based case-study examination, as well as a more traditional examination. The content is largely case-study-based, and, according to Rowell,[17] it is intended to expose students to real-world problems in both traditional and newer practice areas. If students fail one part of the assessment they are allowed to just repeat the part of the assessment which they failed (and do not need to attend the residential part of the course again).

D.6 The Institute of Actuaries of Australia is in the process of considering whether and how to recognise research (e.g. a Ph.D.) as part of the route to qualification, but does not currently do so.

17 E-mail dated 23 August 2006

APPENDIX E
SURVEY OF STELLENBOSCH UNIVERSITY ACTUARIAL SCIENCE STUDENTS

E.1 THE QUESTIONNAIRE USED AND SUMMARY OF RESPONSES

Name:

Year of Study: 1/2/3/PG

INSTRUCTIONS
Circle your answers to the questions below in the following grid, adding any additional comments you would like to for any of the questions:

Question	Answers	Further Comments
1	A B C D E	
2	A B C D E	
3	A B C D E	
4	Yes Unsure No	
5	Yes Unsure No	
6	A B C D E	
7	Yes Indifferent No	
8	A B C D E	
9	Yes Unsure No	
10	Yes Unsure No	

Questions

1. What was the main reason why you started studying actuarial science?
   - A. the money
   - B. the internationally recognised qualification
   - C. the prestige of being an actuary
   - D. the challenge (of a difficult qualification)
   - E. other (please specify in the space provided)

Responses

A	B	C	D	E
8%	25%	14%	43%	10%

2. Which of the items in the list above would you say was the second most important reason for you embarking on your actuarial studies?

Responses

A	B	C	D	E
26%	30%	21%	17%	7%

3. What is it that makes the Faculty/Institute of Actuaries' (UK) qualification attractive to you?

A. the fact that the Institute & Faculty are the oldest actuarial associations
B. the fact that it is not a South African qualification
C. the fact that it is UK based and internationally recognised
D. you have no strong preference so long as the actuarial association through which you qualify has an internationally recognised qualification of an equivalent standard to that of the UK associations
E. other (please specify in the space provided)

Responses

A	B	C	D	E
6%	2%	43%	49%	0%

4. As from 2007 you will be compelled to write an examination (called a Practice Module) testing your local (South African) knowledge of legislation and practice before you can become a Fellow of ASSA (the Actuarial Society of South Africa). Do you think this is a good thing?

Responses

Yes	Unsure	No
79%	14%	7%

5. At present students in South Africa have the choice of writing their (final) Specialist Applications examination based on the UK environment or based on the South African environment, but still qualifying as a Fellow of the Faculty/Institute of Actuaries (UK) in both cases. Do you believe it is more appropriate for a local actuary to have written the SA-based Specialist Applications exam as opposed to the UK-based exam?

Responses

Yes	Unsure	No
61%	26%	13%

6. If you have the choice, what would make you prefer to write the UK-based Specialist Applications exam rather than the SA-based exam?

A. if you intended to work in the UK
B. if the UK exam had a higher percentage of students passing
C. if the UK exam had a lower percentage of students passing
D. if the tuition material was better for the UK exam
E. other (please specify in the space provided)

Responses

A	B	C	D	E
51%	8%	2%	33%	6%

The remaining questions all assume a situation where an actuarial qualification is available in South Africa (for example issued through the Actuarial Society of South Africa) which is internationally recognised by the International Actuarial Association and all of the major actuarial associations worldwide.

7. Would you prefer to have such a local qualification rather than that of the Faculty/Institute/Society of Actuaries?

Responses

Yes	Indifferent	No
22%	27%	51%

8. What, if anything, would concern you about a South African actuarial qualification?

A. nothing, provided standards are maintained
B. it will not have the same prestige as an overseas qualification
C. it is South African and thus is unlikely to be as good as an international qualification
D. the tuition material will probably not be as good
E. other (please specify in the space provided)

Responses

A	B	C	D	E
27%	43%	16%	11%	3%

9. Suppose that the South African actuarial qualification described above were compulsory in order to practise as an actuary in South Africa. Would you still want to become an actuary?

Responses

Yes	Unsure	No
88%	8%	4%

10. If the South African actuarial qualification described above were compulsory in order to practise as an actuary in South Africa would you try to additionally qualify as a Fellow of an overseas organisation (e.g. Faculty/Institute of Actuaries)?

Responses

Yes	Unsure	No
57%	31	12%

E.2 PROFILE OF RESPONDENTS

Table E.2.1 Numbers of respondents

Year of Study	Number
First	47
Second	35
Third	39
Postgraduate	24
Total	**145**